Muelleria 21: 101–104 (2005)

Callistemon nyallingensis (Myrtaceae) a new species from East Gippsland, Victoria

*W. M. Molyneux**
*La Trobe University, Department of Botany, Life Sciences School, Bundoora 3076, Victoria, Australia.

Abstract

Callistemon nyallingensis Molyneux is described and illustrated. It is a narrow endemic apparently confined to Boggy Creek at Nowa Nowa, in East Gippsland in southern Victoria. Its habitat, conservation status and relationship with *Callistemon subulatus* are discussed.

Introduction

A new rheophytic chasmophyte species of *Callistemon* has been distinguished from *C. subulatus* Cheel, under which species it was included by Willis 1973, p 451 and Costermans 1981, p 244, by map location. No herbarium specimens prior to the author's 1996 collection (cited below) could be found at MEL, which was surprising considering the Willis reference.

Taxonomy

Callistemon nyallingensis Molyneux sp. nov.
Callistemoni subulato affinis sed foliis late linearibus, sparsiis et plerumque irregulariter dispositis, floribus purpureo-rubris, capsulis persistentibus tarde dehiscentibus differt.

Type: Cultivated at the author's property, Dixons Creek, Victoria, Australia; 10.xii.2003, from seed and cutting material collected in 1996 by the author from plants on the west bank of Boggy Creek, thirty metres upstream from the old railway bridge, east of Nowa Nowa. (holotype: MEL; isotypes: CANB, NSW, BRI).

Shrub, small, upright, 0.65–1.2 m tall, 0.6–1 m wide, single or few stemmed, new growth sericeous greyed-red (RHS 178B), soon becoming glabrous. *Bark* tight papery grey. *Leaves* open to moderately dense, often irregularly aligned, and sometimes appearing sub-secund in arrangement, spreading at c. 20–30° to stems. Petioles variously twisted or straight, lamina flexible becoming coriaceous, broadly linear to lanceolate, often asymmetrical, strongly mucronate, green RHS 143A, (25–) 30–40 (–58) mm long, 3–4 (–6) mm wide; midvein strongly raised on upper surface, indented, level, or slightly raised on lower surface, margins thickened, secondary intramarginal veins evident. Oil glands obvious and of medium density on both surfaces, secondary venation not evident. Crushed leaves release a low level "eucalyptus" like odour. *Conflorescence* usually distally frondose on main stems, or less often on short side stems, horizontal to ascending or pendulous, 36–140 flowered, 70–125 mm long, 40–46 mm wide, new leaf growth often interrupting distal end of flowers, rhachis glabrous or sparsely villous where perigynium attaches. Perigynium glabrous, c. 7 mm long, 4 mm wide. *Flowers* openly arranged on rhachis. Bracts chaffy, ovate-subulate to subulate with suffused pink-red markings, glabrous excepting for scattered hairs at the base on dorsal side, strongly ventrally concave, 11–13 mm long, 2.5–4.5 mm wide, deciduous at early bud development. Sepals rounded to rhomboidal, 2 mm long, 2.2 mm wide, glabrous, margins lightly ciliate. Petals c. 4 mm long, 3.5 mm wide, green, strongly concave, margins weakly ciliate. Stamens 24–26 per flower, 9–12 mm long, purple-red (RHS 53B), anthers purple (RHS 77A), ovary hoary, obscured c. 1.8 mm across, and 0.5–0.75 mm below rim.

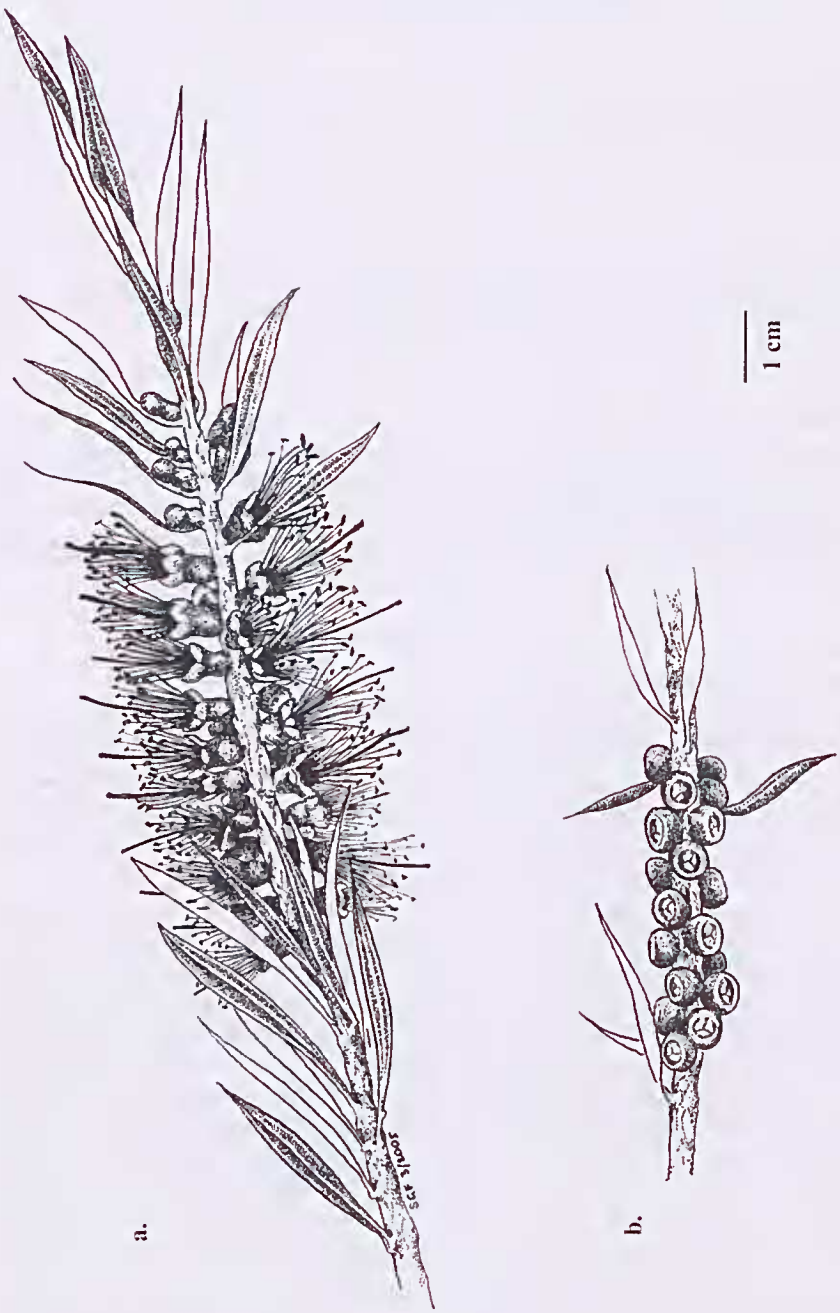

Figure 1. *Callistemon nyallingensis* a. conflorescence and leaf detail (x1) b. seed capsule at 3 years (x1)

Style gently curving over its length or nearly straight, mostly much longer than stamens, purple-red (RHS 53B), 12–18 mm long, narrowed behind the shallowly domed style end. Capsules squat, 3.5–4 mm long, c. 4.5–5.5 mm wide, orifice 2.5–3 mm wide, ovary set 1–1.5 mm below rim, retained for many years, not dehiseing early, openly arranged or touching.

Reeommended vernaeular: Boggy Creek Bottlebrush.

Specimens examined: **VICTORIA**: Boggy Creek, west bank c. 30 metres upstream from railway trestle bridge, 2.xii.1996, *W.M. Molyneux* (MEL 2041778), and same loeation 30.xi.1997, *W. M. Molyneux* (MEL 2237174) (NatMap 1982). Boggy Creek c. 300 metres downstream from Nowa Nowa Pumping Station, 4.v.2004, *W.M. Molyneux and S.G. Forrester* (MEL 2237173).

Habitat and major plant associations: *Callistemon nyallingensis* is a rheophytie ehasmophyte apparently confined to the Boggy Creek Gorge adjacent to and upstream of the township of Nowa Nowa in East Gippsland, Vietoria. It is found on roek bars in the ereek, often on nearly vertical faces, whieh are derived from Devonian aeid voleanies.

The speeies is extensively sympatrie with *Callistemon pallidus*, *Tristaniopsis laurina* and *Calytrix tetragona*, and less often with *Melalenca ericifolia*. *Encalyptus viminalis* is the dominant tree on the lower moist slopes, while *E. sieberi* and *E. globoidea* are the major trees together with *Acacia silvestris* and *Philotheca trachyphylla* in drier selerophyll woodlands.

Etymology: The epithet is derived from the Kurnai Nation, and is the Tatungalung tribal name for a boggy plaee. The name Boggy Creek was applied by surveyor and explorer Angus MeMillan.

Discussion

Callistemon nyallingensis, while readily distinguishable from Vietorian and southern New South Wales populations of *C. subulatus*, may be eonfused with Cheel's type from the Nattai River. While the range of leaf length and width in most *C. subulatus* populations falls within the lower end of the range of *C. nyallingensis* (a Shoalhaven area eolleetion is intermediate between the two, L. Craven pers. comm.), the leaves of the type speeimen of *C. subulatus* are about 30–60 mm long and 3–4 mm wide, in eontrast to those of *C. nyallingensis* whieh are 25–58 mm long, and 3–6 mm wide. Other speeimens eolleeted from plants grown from seed, eolleeted by Cheel from the type area, exhibit foliage size and arrangement more in aeeord with other populations of *C. subulatus*. Cheel's type eolleetion of *C. subulatus* has the larger leaves less regularly aligned than both southern New South Wales and Vietorian populations of the species. It may be that Cheel seleeted lush new growth for his type. It is obvious, however, that his type is not representative of the general range of leaf size for the species.

In Molyneux (1993) it was stated that *C. subulatus* did not oeeur further west than Cann River, and that a Willis (1973) reference to *C. subulatus* as "a riparian shrub ± 4 feet high from Nowa Nowa eastwards" was a possible anomaly. At that time the author was not aware of the presenee of *C. nyallingensis* at Boggy Creek, Nowa Nowa, whieh had apparently been mistaken by Willis for *C. subulatus*. In Molyneux (1997), I admitted my oversight and provided some eharaeters that differentiated *C. subulatus* from *C. nyalligensis*, indieating the presence of this new taxon at Boggy Creek.

Correction and addition: Speeimens named as *Callistemon sieberi* from Boggy Creek, examined by the author at MEL, are in faet *Callistemon pallidus*, whieh is often sympatrie with *C. nyallingensis*. *Callistemon citrinus* grows in the region but in higher boggier sites to the east in the catchment of Ironstone Creek. During examination of the upper Boggy Creek area about two hundred metres below the pumping station on 5 May 2004, the author colleeted an apparently undeseribed mauve-flowered *Callistemon* with affinities to C. *pallidus*.

Distribution and conservation status: Callistemon nyallingensis is presently known only from the gorge section of Boggy Creek in East Gippsland, Victoria. The author has collected the species over a distance of c. 4.8 km from c. 300 metres below the pumping station downstream to a point just above the old railway trestle bridge. This southern limit is in close proximity to the township of Nowa Nowa and only several hundred metres upstream of where Boggy Creek becomes tidal. The estimated area of occupancy of *C. nyallingensis* is ± 10 ha over a length of approximately 4.8 km and an average width of 20 m. Estimated population size is 800–1000 plants almost all of which are protected within the Lake Tyers State Park. On present evidence the species should be regarded as vulnerable, with a ROTAP risk code (Briggs and Leigh 1996) of 2VCi and IUCN (2001) risk code of VU D1+2.

Table of comparison between *C. nyallingensis* and *C. subulatus*

Character	*C. nyallingensis*	*C. subulatus*
Habit	A mostly upright narrow shrub, single-stemmed; 0.65–1.2 m high, 0.6–1m wide (one specimen 1.5 m high, 2.5 m wide)	Arching spreading shrub often multi-stemmed; 0.9–1.8 m high, 1.2 (–2.2) m wide
Leaves	Broad linear to lanceolate, thickish texture, open to moderately densely arranged, irregularly aligned, often appearing sub-secund to stems (25–) 30–40 (–58) mm long,3–4 (–6) mm wide. Colour RHS 143A Green Group	Linear subulate, thin textured, dense ± regularly aligned around stems (20–) 26–32 (–60) mm long, (1.5–) 2–2.5 (–4) mm wide. Colour RHS 137C Green Group
Leaf density	Number of leaves in upper 30 cm of stems ± 86, and 35 in lower 30 cm of stems	Number of leaves in upper 30 cm of stems ± 150, and 65 in lower 30 cm of stems
Leaf venation	Upper surface midvein strongly raised, lower surface midvein indented to slightly raised. Secondary intramarginal veins evident, leaf margins thickened	Upper surface midvein obscure, lower surface midvein obvious, indented. Secondary intramarginal longitudinal veins venation obscure, margins not thickened
Conflorescence	Flowers openly arranged on rhachis, which is glabrous excepting for a few scattered hairs; perigynium glabrous, longer than wide, 70–125 mm long, 40–46 mm wide	Flowers densely arranged on rhachis, which is nearly glabrous or villous in some populations (eg. Lower Wingan River–Tonghi Creek) often as wide as long, 40–80 mm long, 45–50 mm wide
Floral bracts	Ovate-subulate to subulate, 11–13 mm long, 2.5–4.5 mm wide.	Narrow, linear, subulate, 10–12 mm long, 0.8–1.2 mm wide
Stamens	9–12 mm long, 24–26 per flower	14–22 mm long, 18 – 20 per flower
Style	12–17 mm long, purple-red RHS 53B	15–22 (–25) mm long, crimson RHS 45A
Flowering	Late November to early January, no apparent second phase	Late October to mid December, often again in autumn–early winter
Capsules	Openly spaced to touching, 4.5–5.5 mm across, only dehiscing after many years	Touching to crowded, 3–4 (–5) mm across, often dehiscing early.

All colour coding 1986 edition RHS swatch.

Acknowledgements

To the Royal Botanic Gardens Melbourne for staff support and access to collections, Neville Medhurst of Toorloo Arm for information on population numbers, Lyn Craven for discussions on variation within *C. subulatus*, David Cameron for comments on the draft of this paper and editorial assistance, Neville Walsh for Latin diagnosis from my English draft, and Sue Forrester for collating the manuscript and supplying the illustration.

References

Briggs, J.D. & Leigh, J.H. (1996). *Rare or Threatened Australian Plants*, Revised Edition. CSIRO and Australian Nature Conservancy Agency, Canberra.

Cheel, E. (1925). Two new species of *Callistemon*, with notes on certain other species. *Proceedings of the Linnaean Society of New South Wales*, **1**: 259–266.

Costermans, L.F. (1981). *Native Trees and Shrubs of South-Eastern Australia*. Rigby: Dee Why West, NSW.

IUCN (2001). IUCN Red List Categories: Version 3.1. Prepared by the IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK.

Molyneux, W.M. (1993). A new species of *Callistemon* R. Br. (Myrtaceae) from East Gippsland. *Muelleria* **8**: 61–64.

Molyneux, W.M. (1997). Notes on *Callistemon* in East Gippsland, including the description of *C. genofluvialis* sp. nov. *Muelleria* **10**: p 57–61.

NATMAP (1982). Orbost Sheet 8522 (1:100,00), NATMAP, Canberra.

Willis, J.H. (1973). *A Handbook to Plants in Victoria* p. 451, Melbourne University Press, Carlton.